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1. An apparatus for polishing a substrate comprising:  
a rotary polishing platen having an upper surface;  
a polishing pad fixedly attached to said upper surface;  
a polishing slurry containing a mechanical abrasive deposited on said  
upper surface of said polishing pad;

5 a rotary polishing head assembly having a shallow recessed face  
adapted to centrally hold the upper back edge of said substrate, said  
recessed face is oriented substantially parallel to said upper surface of  
said polishing platen;

10 said polishing head assembly has a rotating axis offset relative  
to the rotary axis of said polishing platen;  
a non-rotary cylindrical actuator assembly, having a bottom surface, is  
coaxially oriented about the outer edge of said polishing head assembly;

15 a ditched ring removably attached to said bottom surface of said  
cylindrical actuator assembly.

2. The apparatus of claim 1, wherein said cylindrical actuator  
assembly is vertically floatable with respect to said rotatable polishing head  
assembly.

20 3. The apparatus of claim 1, wherein said ditched ring further comprises:  
a bottom section of a reduced wall thickness of approximately 5 mm;  
a multiplicity of conduit grooves formed in said bottom section of ditched  
ring permitting a boundary layer of abrasive slurry to flow unimpeded to  
a rotating substrate ;

25 said conduit grooves formed in pairs, each groove formed on either side  
of a center coordinate axis of said ditched ring;

said conduit grooves pairs are radially concentric and developed from a point outside of said ditched ring on said center axis;

30 said center coordinate axis of said conduit grooves is coincident with rotatable axis of the polishing platen.

4 4. The apparatus of claim 2 wherein said conduit grooves are substantially 0.4 mm wide.

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5 5. The apparatus of claim 2 wherein said conduit grooves are radially concentric with a spacing between of approximately 20 mm.

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6 6. The apparatus of claim 1 wherein said reduced wall thickness at the bottom of said ditched ring is configured to displace wrinkles from the outer edge of said substrate to the outer periphery of the ditched ring.

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7 7. The apparatus of claim 2 wherein said radially concentric conduit grooves form radial tracks of a metered volume of abrasive slurry on surface of said polishing pad;

8 8. The apparatus of claim 1 wherein the use of said ditched ring during chemical mechanical polishing of substrates uniformly removes microscratches.

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9. A method for polishing a semiconductor wafer comprising the steps of: providing a chemical mechanical polishing apparatus having a rotary polishing platen with a polishing pad fixedly attached to its upper surface, and

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a polishing slurry containing a mechanical abrasive dispensed on said upper surface of said polishing pad, and

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a rotary polishing head assembly having a shallow recessed face adapted to centrally hold the upper back edge of said semiconductor wafer, said recessed face is oriented substantially parallel to said upper surface of said polishing platen;

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said rotatable polishing head assembly positionally offset relative to 6 said rotating polishing platen, and providing a non-rotary cylindrical actuator assembly having a bottom surface that is coaxially oriented about an outer edge of said polishing head assembly;

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removably attaching a ditched ring to the bottom surface of said cylindrical actuator assembly.

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10. The method of claim 9, wherein said cylindrical actuator assembly is vertically floatable with respect to said polishing head assembly.

11. The method of claim 9, wherein said ditched ring further comprises: a bottom section of a reduced wall thickness of approximately 5 mm; a multiplicity of conduit grooves formed in said bottom section of ditched ring permitting a boundary layer of abrasive slurry to travel unimpeded to a rotating semiconductor wafer;

said conduit grooves formed in pairs, each groove formed on either side of a center coordinate axis of said ditched ring;

said conduit grooves pairs are radially concentric and developed from a point outside of said ditched ring on said center axis;

80        said center coordinate axis of said conduit grooves is coincident with  
            rotatable axis of the polishing platen.

12. The method of claim 11 wherein said conduit grooves are substantially  
0.4 mm wide.

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13. The method of claim 11 wherein said conduit grooves are radially  
concentric with a spacing between of approximately 20 mm.

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14. The method of claim 9 wherein said reduced wall thickness at the  
bottom of said ditched ring is configured to displace wrinkles from the outer edge  
of said semiconductor wafer to the outer periphery of the ditched ring.

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15. The apparatus of claim 11 wherein said radially concentric conduit  
grooves form radial tracks of a metered volume of abrasive slurry on surface of  
said polishing pad;

16. The method of claim 9 wherein the use of said ditched ring during  
chemical mechanical polishing of wafers uniformly removes microscratches.